DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 1.28

WELDING INSPECTION REPORT

Resident Engineer: Siegenthaler, Peter
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-023482
Date Inspected: 09-May-2011

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: American Bridge/Fluor Enterprises, a JV

OSM Arrival Time: 700
OSM Departure Time: 1730
Location: Job Site

CWI Name:	Pat Swain			**CWI Present:**	☑ Yes	☐ No		
Inspected CWI report:	☐ Yes	☐ No	☑ N/A	**Rod Oven in Use:**	☐ Yes	☐ No	☑ N/A	
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A	
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☑ Yes	☐ No	☐ N/A	
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Approved WPS:**	☑ Yes	☐ No	☐ N/A	
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A	

Bridge No: 34-0006
Component: Tower

Summary of Items Observed:

This Quality Assurance (QA) Inspector, Craig Hager was on site at the job site between the times noted above. This QA Inspector was on site to randomly observe Quality Control (QC) personnel perform Non-Destructive Testing (NDT) and monitor American Bridge/Fluor (ABF) welding operations. This Quality Assurance (QA) Inspector, Craig Hager observed the following.

This QA Inspector observed the work in progress on the upper and lower Interior Corner Closure Splice Plates located at the B- C and C-D corners in the Tower sections and elevations noted below.

South Tower, elevation 51 meters: This QA Inspector observed ABF welding personnel Salvador Sandoval (#2202) performing production welding using the Flux Cored Arc Welding (FCAW) process on the lower half of the upper splice plate located at the B-C corner of the tower. This QA Inspector observed QC Inspector Steve Jensen verify the following FCAW parameters; 270 amperes and 22.1 volts at a travel speed of 100 mm per minute to produce a heat input of 3.58 Kj per mm. The welding observed appeared to comply with ABF-WPS-D15-F2200-3.

This QA randomly observed ABF welding personnel Mike Jimenez (#4671) performing production welding using the FCAW process on the lower half of the lower splice plate located at the C-D corner of the tower. This QA Inspector observed QC Inspector Steve Jensen verify the following FCAW parameters; 250 amperes and 20.9 volts at a travel speed of 90 mm per minute to produce a heat input of 3.48 Kj per mm. The welding observed appeared to comply with ABF-WPS-D15-F2200-3.

Later in the shift this QA Inspector observed ABF welding personnel Salvador Sandoval (#2202) using FCAW process for production welding on the upper fillet weld (2F) on the upper splice plate at the B-C corner. This QA Inspector observed QC Inspector Steve Jensen verify the following parameters; 336 amperes and 22.6 volts at a travel speed of 200 mm per minute to produce a heat input of 2.28 Kj per mm. The welding observed appeared to comply with ABF-WPS-D15-F2200-2.

At approximately 1700 hours this date welding stopped and induction heat blankets were placed as follows; a 2-meter long blanket was placed over the welding at the B-C corner, upper plate and a 1-meter long blanket was placed over welding at the C-D corner, lower plate. See photos below. This QA Inspector observed the thermo couples positioned under the blankets and observed the post heating program entered in the “Proheat” induction heating units. The program appeared to be set for a temperature of 300°F for a period or 3 hours.

West Tower, elevation 51 meters: This QA Inspector was informed by QC Inspector Steve Jensen that he had performed and accepted the fit up of the upper and lower splice plates in the B-C and C-D corners. This QA Inspector performed a random visual verification of the fit ups and observed the following.

B-C corner, lower plate: This QA Inspector observed a 3 mm thick filler plate was used on both the left and right side just below the bottom splice between the bolted corner plate and the tower skin plate. The filler plate on the right side appeared to be approximately 250 mm in length and was used to fill an original root gap of 6 mm. After the filler plate was positioned the gap ranged from 3mm to 1 mm. The filler plate on the left side appeared to be approximately 370 mm in length and was used to fill an original root gap of 6 mm. After the filler plate was positioned the gap ranged from 3mm to 1 mm. This QA Inspector was informed by QC Inspector Steve Jensen that Caltrans Engineer Doug Wright had approved the use of the filler plates at this location. This QA Inspector later verbally confirmed this with Caltrans Engineer Doug Wright.

B-C corner, upper plate: This QA Inspector observed no root gaps greater than 5 mm.

C-D corner, lower plate and upper plates: This QA Inspector observed no root gaps greater than 5 mm.

This QA Inspector observed the root gaps had been marked in paint adjacent to the splice plates for use later in determining the final fillet weld sizes and the fit ups appeared to comply with the contract requirements.

East Tower, elevation 83 meters: This QA Inspector was previously informed by QA Inspector Jojo Lizardo the visual inspection of the upper and lower splice plates in the B-C and C-D corners at this location had been inspected and accepted by QC personnel and that he had done the visual verification. This QA Inspector witnessed QC Inspector Tony Sherwood perform the Magnetic Particle Testing (MT) on 10% of the weld length on both the upper and lower half of each plate (upper and lower) at the B-C and C-D corners at this location. QC Inspector Tony Sherwood informed this QA Inspector he had accepted the MT inspections. This QA Inspector performed a random MT verification on a minimum of 25% of the weld length inspected by QC personnel. The inspections observed and work observed appeared to comply with the contract requirements.

Summary of Conversations:

This QA Inspector had general conversations with American Bridge/Fluor (ABF) and Caltrans personnel during this shift. Except as described above and noted below there were no notable conversations.

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This QA Inspector had previously been informed by Lead QA Inspector Bill Levell that QC Supervisor Leonard Cross would be contacting this QA Inspector to coordinate a time to perform several verification inspections of the root gap and base material off set at the various Electro Slag Welding (ESW) weld joint at the 3 to 13 meter elevation. This QA Inspector called QC Supervisor Leonard Cross at approximately 0900 hours this date regarding the verification inspections and was informed that he would call me back later regarding the issue. As of the end of the shift this date this QA Inspector had not heard from QC Supervisor Leonard Cross.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Nina Choy (510) 385-5910, who represents the Office of Structural Materials for your project.

Inspected By:	Hager,Craig	Quality Assurance Inspector
Reviewed By:	Levell,Bill	QA Reviewer